# SSERC logo

**SSERC Risk Assessment** (revised version March 2018)

(based on HSE’s INDG 163 ‘Risk assessment - A brief guide to controlling risks in the workplace’)

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| Activity assessed | Rainbow reaction |
| *Date of assessment* | 30th June 2020 |
| *Date of review (****Step 5****)* |  |
| *School* |  |
| *Department* |  |

| Step 1 | Step 2 | Step 3 | Step 4 | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *List Significant hazards here:* | *Who might be harmed and how?* | *What are you already doing?*  *What further action is needed?* | *Actions* | | | | |
| *by whom?* | | *Due date* | | *Done* |
| Hydrochloric acid is corrosive and produces irritating fumes.  The 0.1 M solution is of no significant hazard | Technician by splashes when preparing solutions. | Work in a fume cupbnoard or a well-ventilated area. Wear gloves and goggles (EN166 3)  If spilled on skin, wash off immediately with copious amounts of water. |  |  | |  | |
| Sodium carbonate and the saturated solution are skin/eye irritants. | Demonstrator / audience vy splashes during demonstration. | Wear eye protection. If spilled on skin, wash off immediately with copious amounts of water. |  |  | |  | |
| Universal indicator is flammable. | Demonstrator / audience by fire during demonstration. | Keep away from sources of ignition. |  |  | |  | |

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| **Description of activity:**  A large measuring cylinder is filled with a 50:50 mixture of 0.1M hydrochloric acid and distilled water. Universal indicator is added to give a red colour. (Adding the indicator first makes mixing much easier)  A saturated solution of sodium carbonate is carefully poured down the side of the tilted cylinder. Being denser than the acid solution, it settles to the bottom and creates a density gradient which is also a pH gradient – giving a lovely rainbow which will be stable for an hour or more. |
| **Additional comments:** |